VANDERBILT UNIVERSITY
OWEN GRADUATE SCHOOL OF MANAGEMENT

Management 535
Professor Craig Lewis
Module IV - Spring 2003

Derivative Securities Valuation

Course Description

This course examines the pricing of derivative securities. We will focus on common stock options, futures options, and exotic options. A number of valuation techniques are examined which include numerical approaches (e.g., binomial, finite difference methods, and Monte Carlo integration).

Course Requirements and Grading

The prerequisite for this course is the successful completion of Management 435c or the permission of the instructor. It is assumed that the student is familiar with calculus and linear algebra.

Examinations:

There will be one, in-class midterm examination which is scheduled for **April 16**. It will be comprised of problems and short essay questions.

Problem sets:

There will be a number of problem sets assigned throughout the module. They may be discussed in small groups, but each student is responsible for an individual write up. Late assignments will not be accepted.

Grading:

The approximate importance of each of the course requirements is:

Problem Sets	60%
Midterm Examination	40%

The final grade for the course will be determined on a total point basis.

Required Textbooks

John Hull, Options, Futures, and Other Derivative Securities, Fifth Edition, Prentice-Hall, 2003.

Course Outline

I. **Introduction**
II. **Introduction to binomial trees (Ch. 10)**
III. **A model of the behavior of stock prices (Ch. 11)**
IV. **The Black-Scholes analysis model (Ch. 12)**
V. **Options on stock indicies, currencies, and futures (Ch. 13)**
VI. **The Greek letters (Ch. 14)**
VII. **Estimating volatilities and correlations (Ch. 17)**
VIII. **Numerical procedures (Ch. 18)**
IX. **Exotic options (Ch. 19)**
X. **More on models and numerical procedures (Ch. 20)**
XI. **Insurance, weather, and energy derivatives (Ch. 28)**